

FIGURE 1 (PRIOR ART)

FIGURE 2

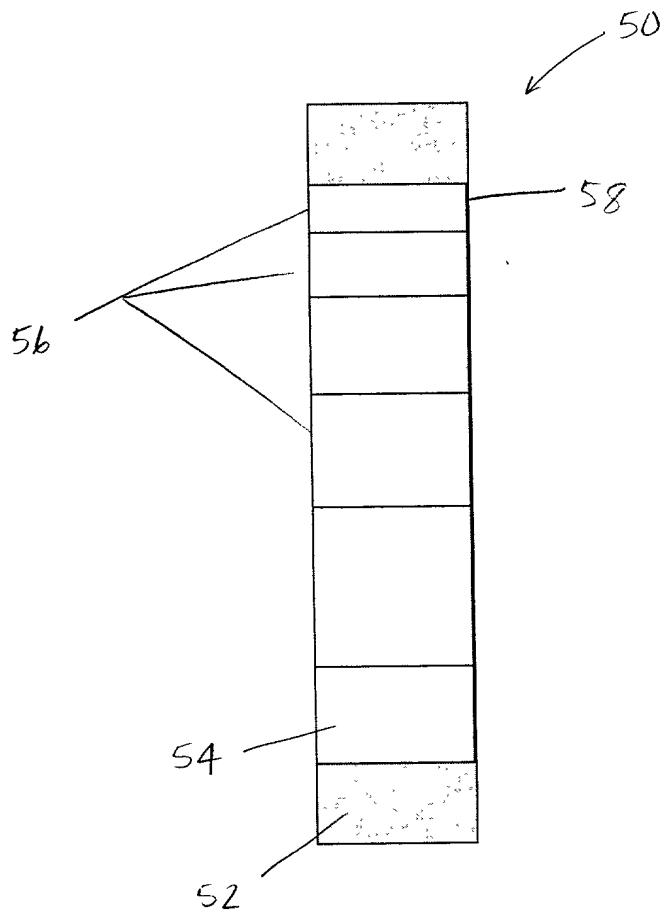


FIG 3

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Required Data Input

File

Fluid Data

Conditions

Formation Properties

Well Geometry

Trip Conditions

Fluid Model: Power-Law

Old Mud Weight: 15.50 ppg

Critical Reynolds Number: 2,100.00

Roughness of Drill-String: 0.00 in

(NOTE: Only used with Bingham plastic model)

Gas Specific Gravity (air = 1.0): 0.65

Mole Fraction of CO2 in Gas Kick:

Mole Fraction of H2S in Gas Kick:

Surface Temperature: 70.00 deg F

Mud Temperature Gradient: 1.00 deg F/100 ft

Water Temperature Gradient: -0.90 deg F/100 ft

Input Data Type

☒ Shear Stress Reading

Shear Stress Reading @ 300 rpm: 65.00

Shear Stress Reading @ 600 rpm: 111.00

☐ Plastic Viscosity

Plastic Viscosity: 46.00

Yield Point Stress: 19.00

Bit Nozzle Diameter

16.00 in/32nd

16.00 in/32nd

16.00 in/32nd

0.00 in/32nd

OK

Cancel

FIG. 4

Table 2 – Surface Tension of Water-Gas System

Pressure (psia)	Surface tension (dynes/cm)	
	74 °F	280 °F
0	75	53
1000	63	46
2000	59	40
3000	57	33
4000	54	26
5000	52	21
6000	52	21
7000	51	22
8000	50	23
9000	49	24

Fig 5

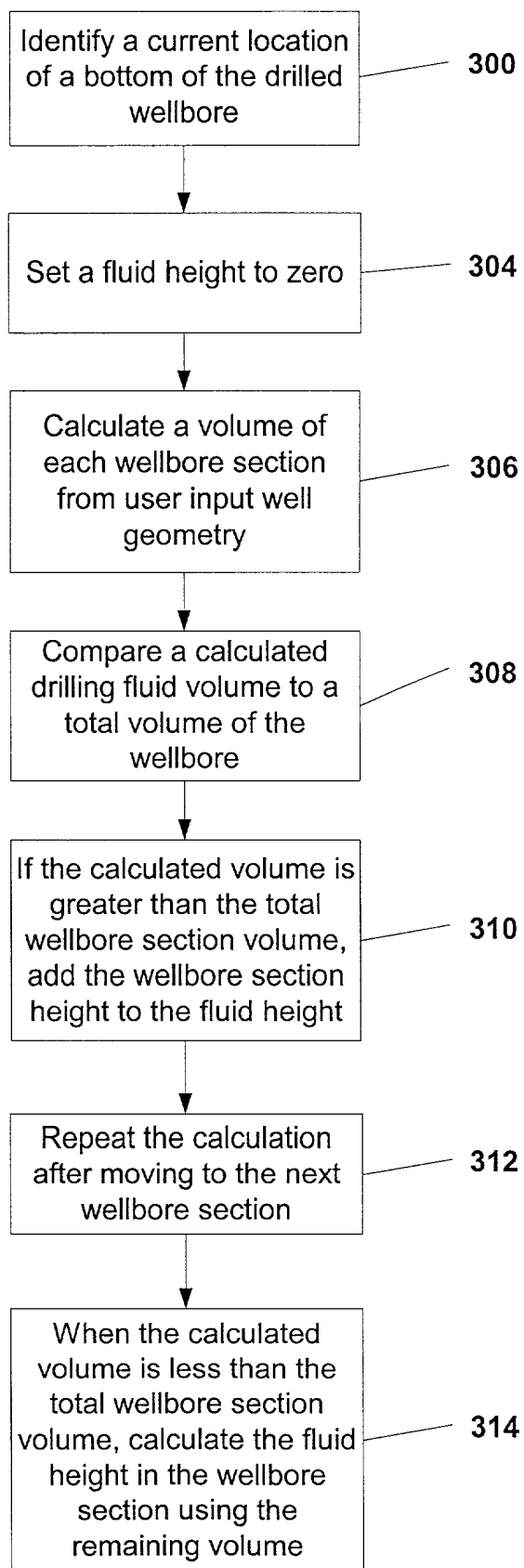


FIG. 6

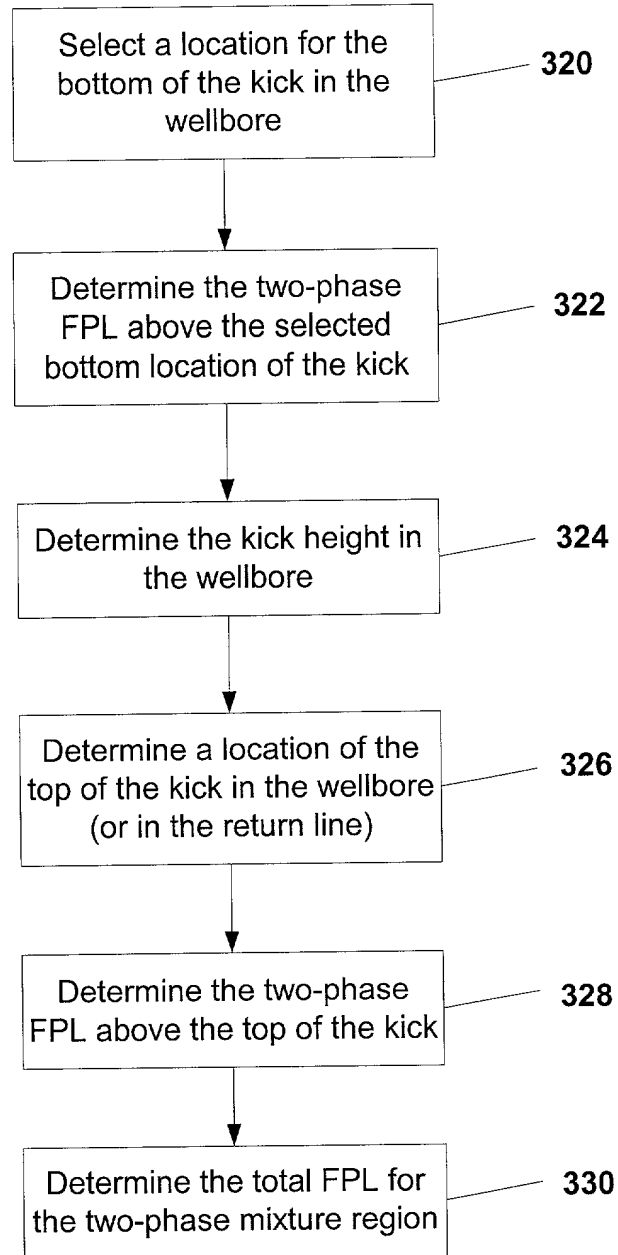


FIG. 7

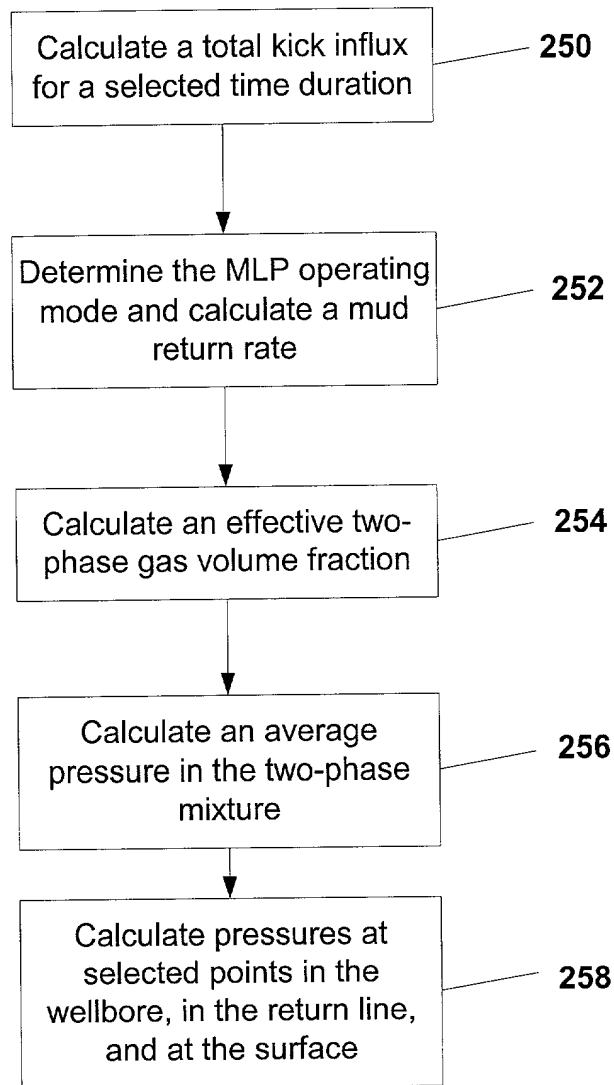


FIG. 8

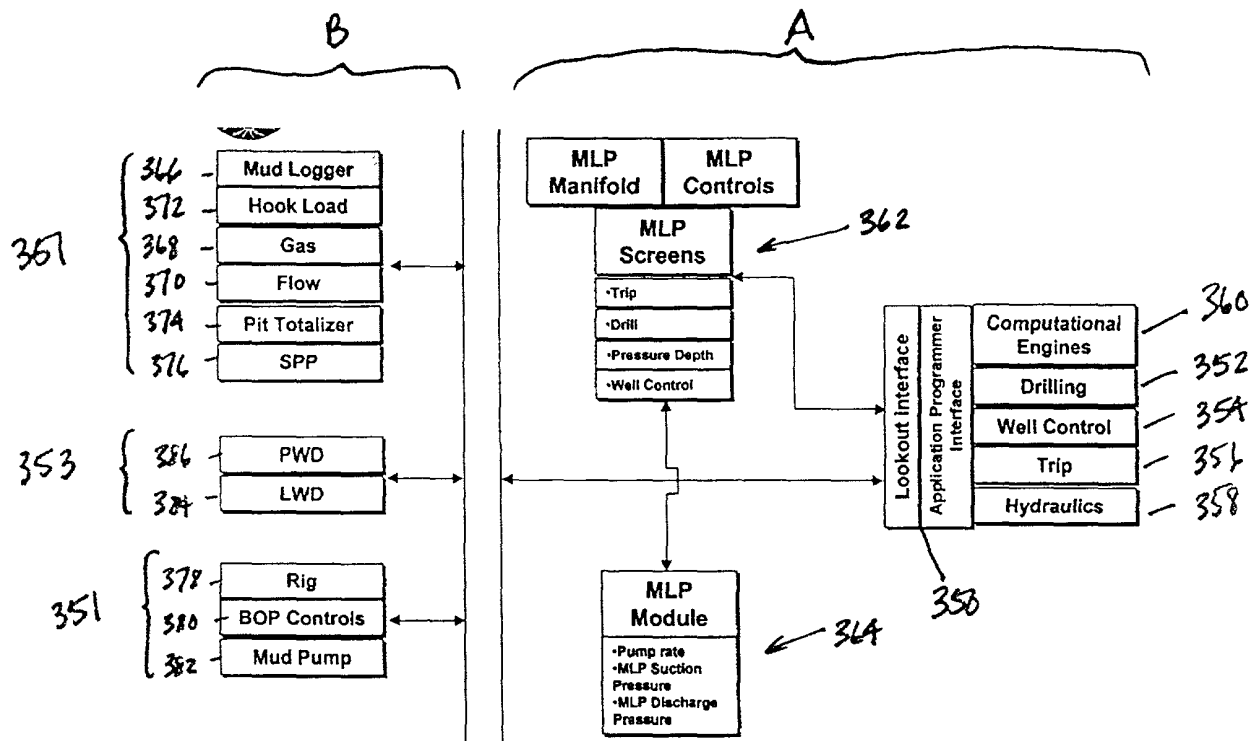
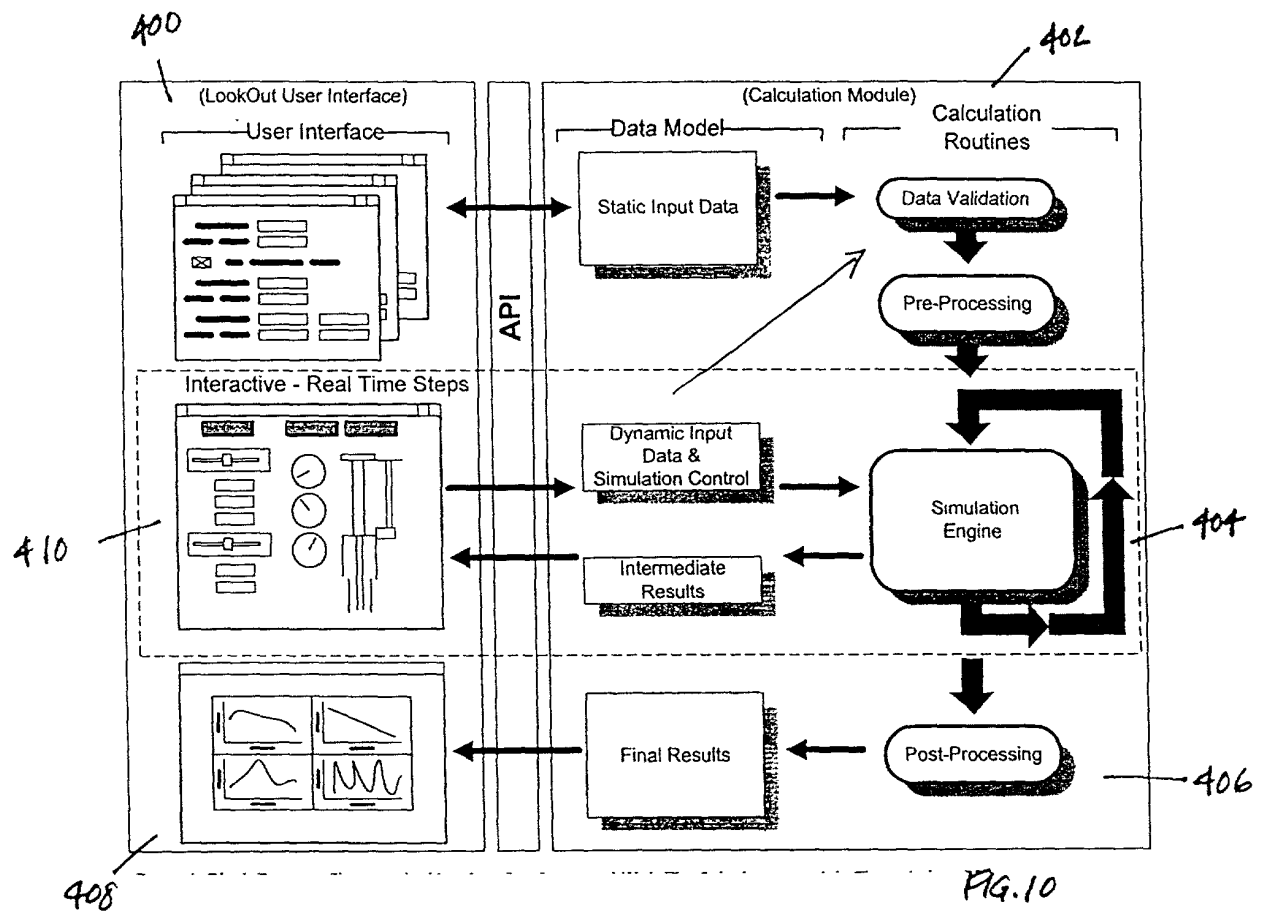


FIG. 9



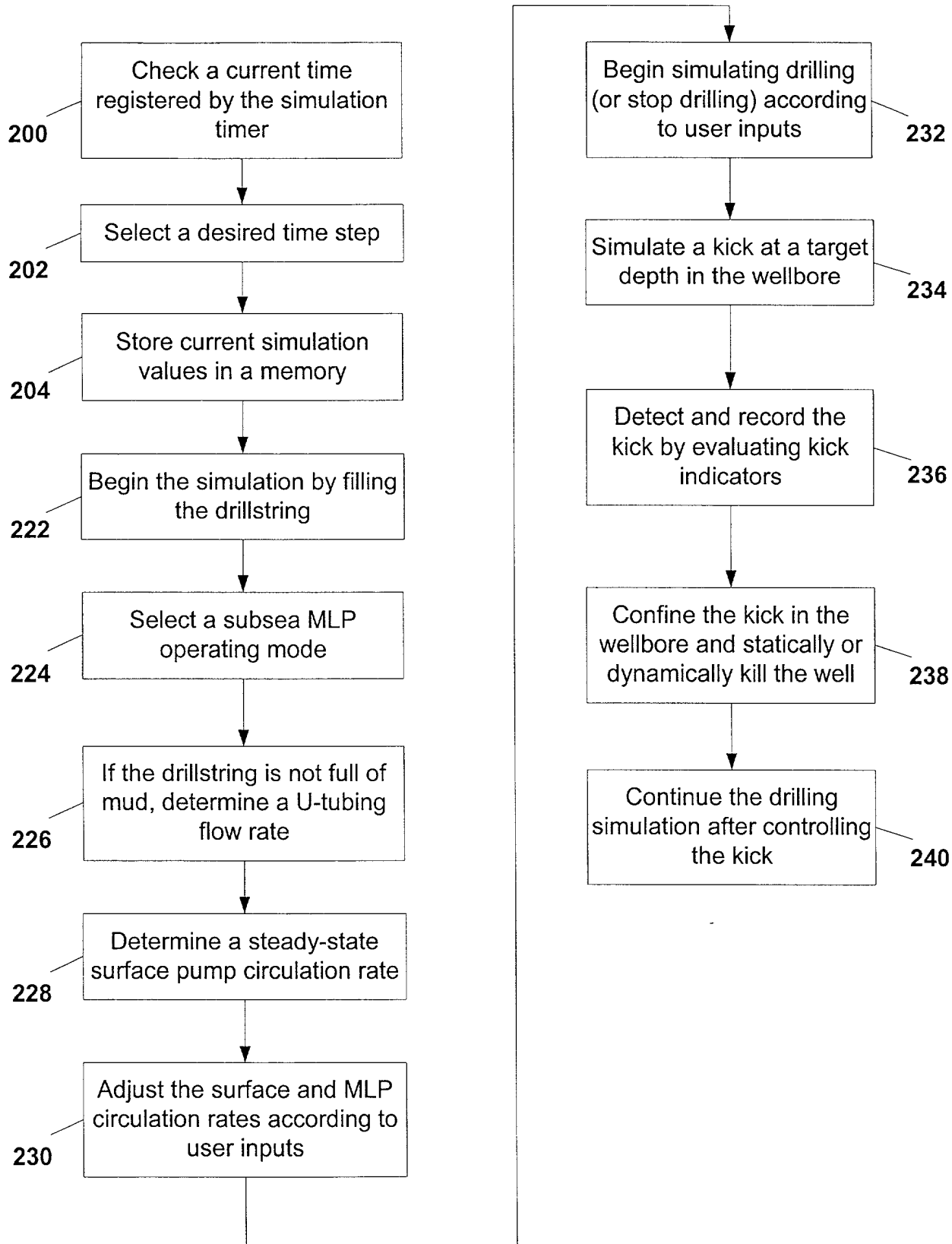


FIG. 11

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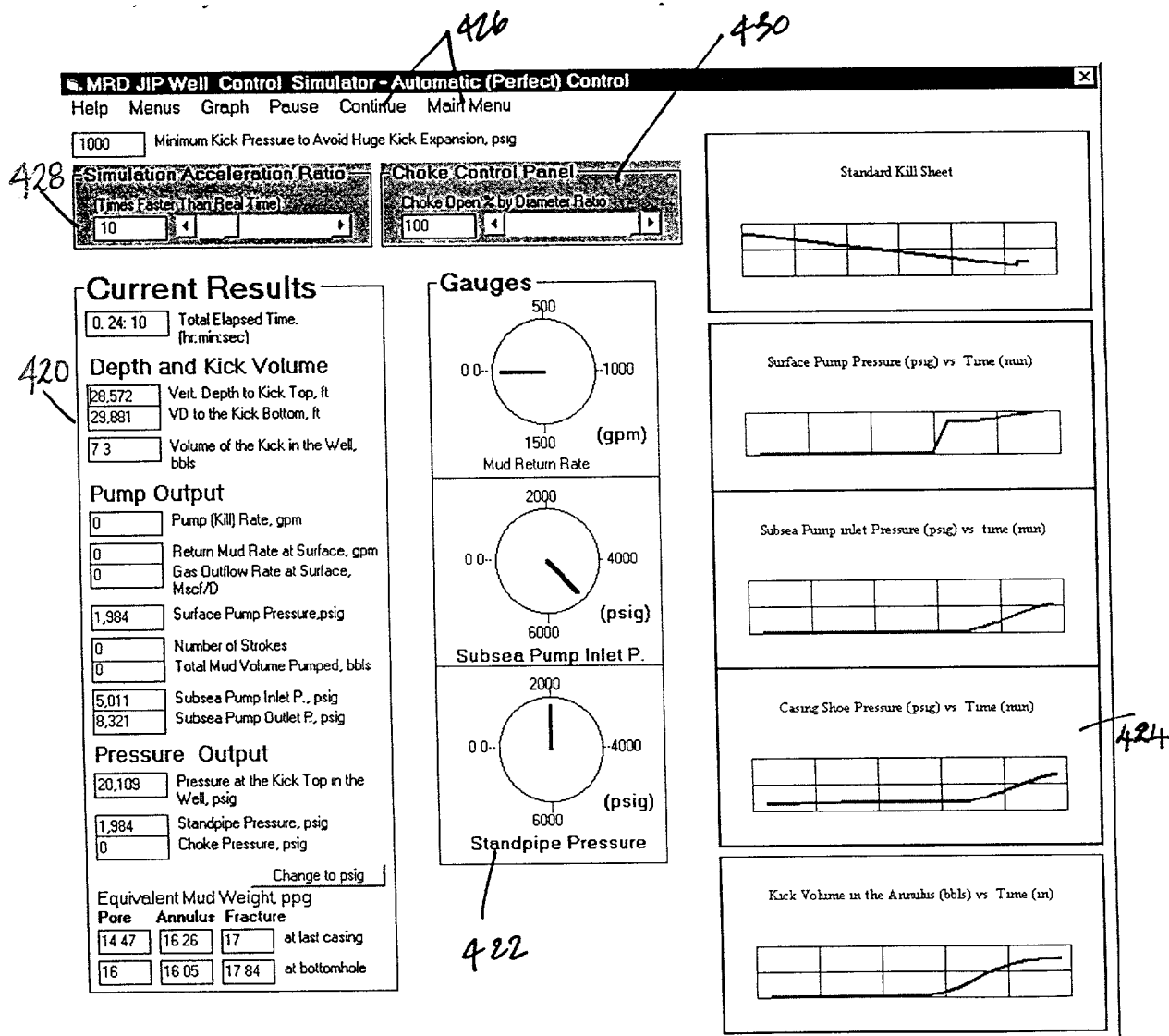


FIG. 12

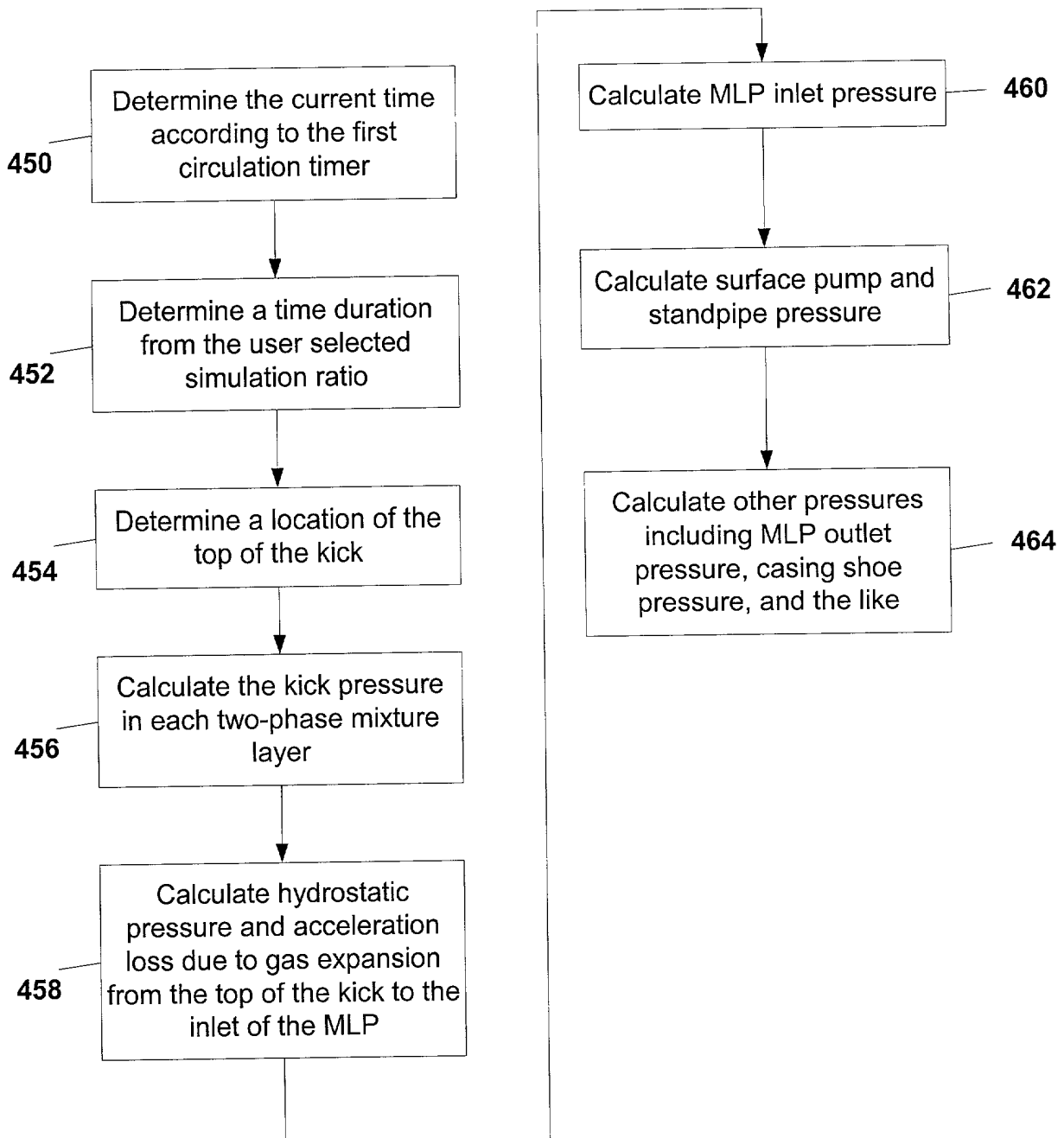


FIG. 13

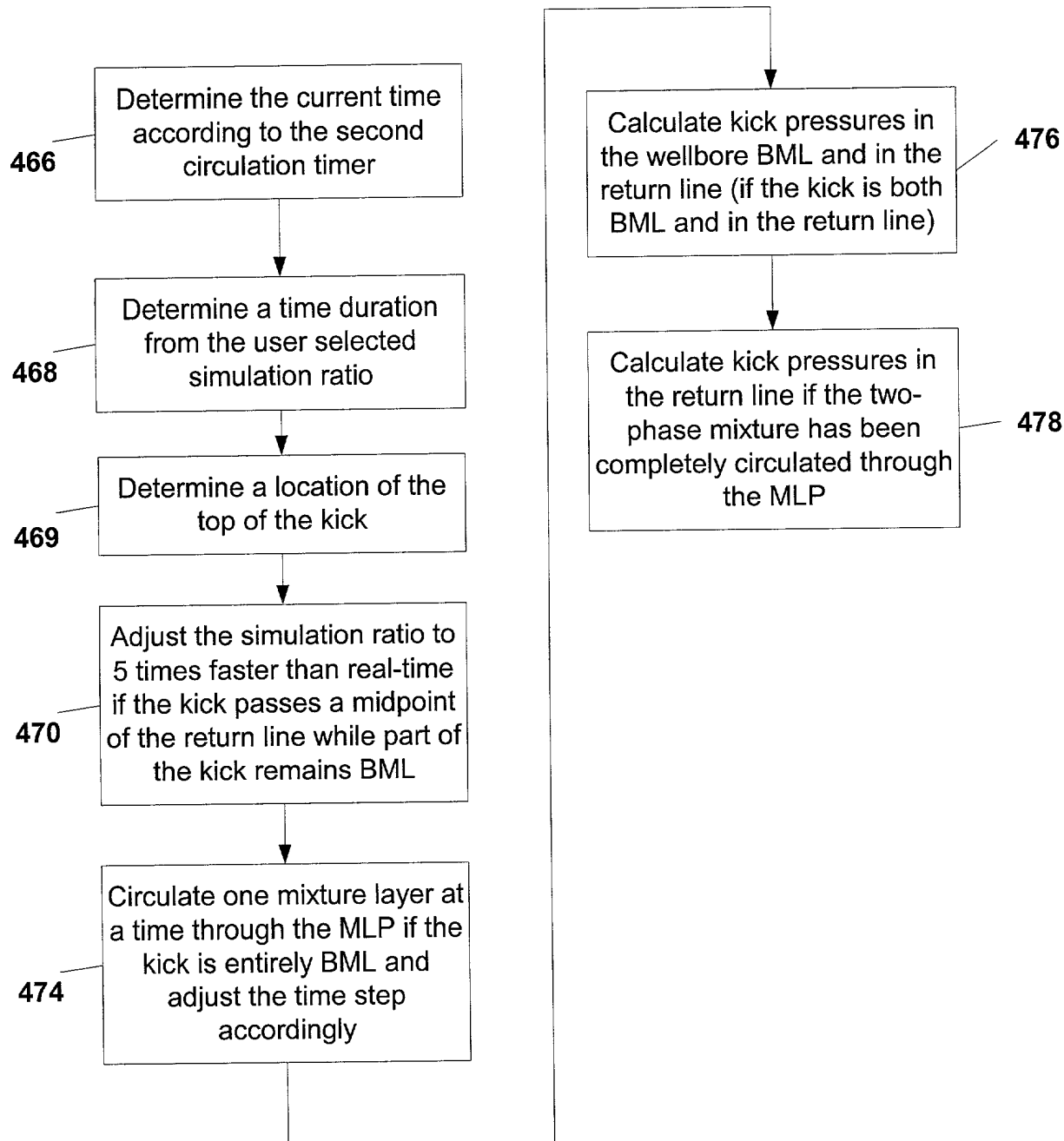


FIG. 14

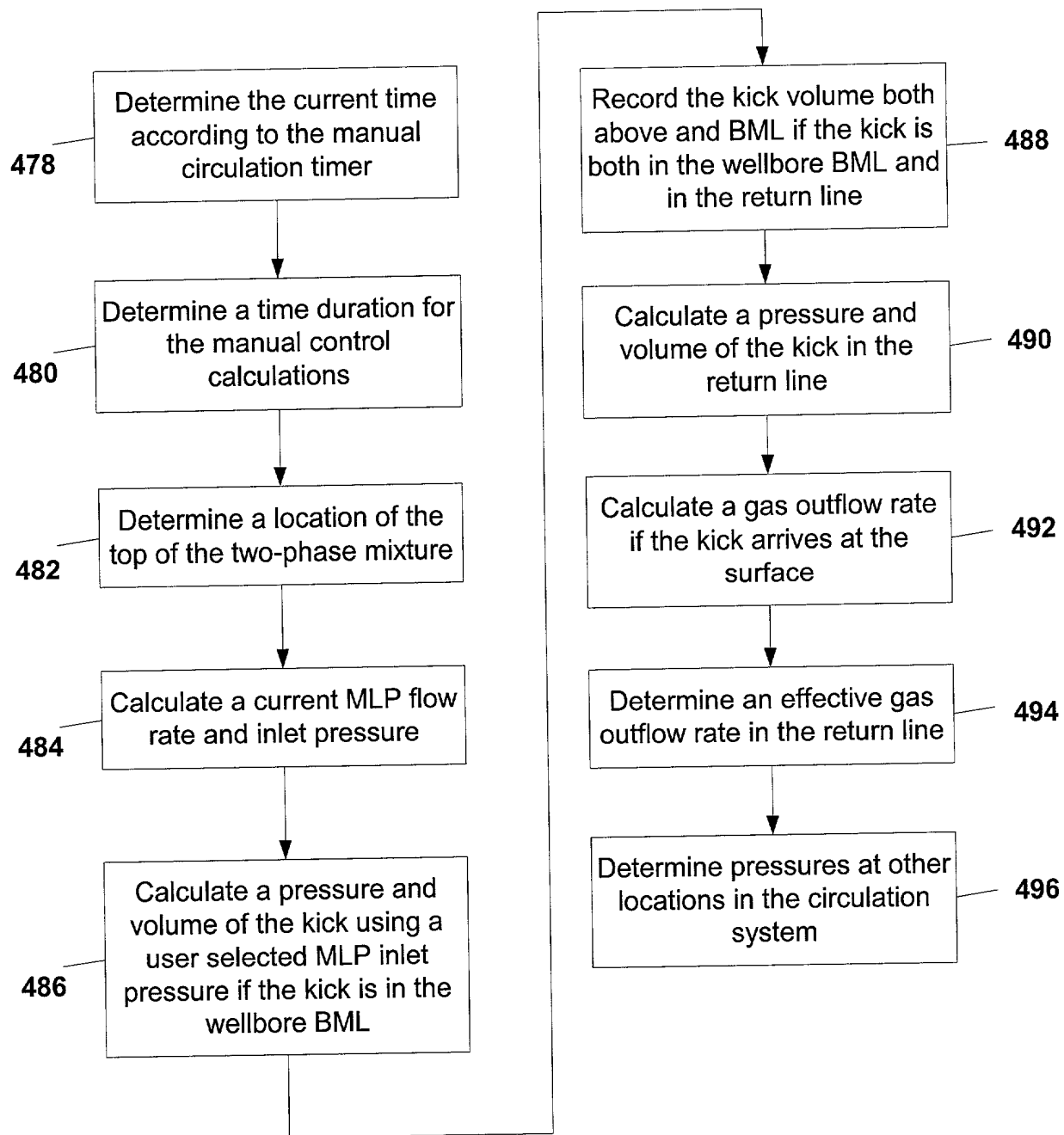


FIG. 15